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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,155	09/30/2003	Kazuyuki Ichikawa	243317US3	9792

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EXAMINER

BINDA, GREGORY JOHN

ART UNIT PAPER NUMBER

3679

DATE MAILED: 01/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/673,155

Applicant(s)

ICHIKAWA ET AL.

Examiner

Greg Binda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 7-19 and 25-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 20-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 20030930& 20040224.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

*Election/Restrictions*

1. Applicant's election without traverse of the shaft shown in Fig. 4 (Group I, Species III) in the reply filed on November 8, 2004 is acknowledged.
2. Claims 7-19 & 25-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and/or species, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on November 8, 2004.

*Drawings*

3. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
4. The drawings are objected to because:
  - a. Reference numeral 10 is used to identify a part and then reused (repeatedly) to identify modified version of said part. Such usage is proscribed. See MPEP § 608.02(e).
  - b. Reference character d0 appears in Fig. 4 but is not mentioned in the description of the embodiment shown in Fig. 4.
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

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even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

6. The disclosure is objected to because:
  - a. Page 2, line 27 includes the inappropriate and meaningless parenthetical phrase “refer to Patent Document 1)”.
  - b. Page 2, line 33 and page 3, line 2, the phrase “Patent Document 1” should be deleted.
  - c. Page 7, lines 18+ alleges that the diameter difference  $d_0$  is shown in Fig. 2 as occurring between the diameter of the conventional groove portion (identified by 104a in Fig. 10a) and the “tip portion of the small diameter portion”. However, there is no way to reference the diameter of the conventional groove portion 104a in Fig. 2 because it isn’t shown there. Furthermore, there is no way to determine where the so-called “tip portion of the small diameter portion” occurs because it isn’t marked by reference numeral in

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Fig. 2, or anywhere else for that matter. Instead d0 simply appears to mark the difference between the diameters of the flat portion 15 and the groove portion 14a.

*Claim Rejections - 35 USC § 112*

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-6 & 20-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1, lines 5+ recites that that the shaft shank of the claimed invention has a groove portion continuously (i.e. not interrupted by taper or other portion) connected to a large diameter portion by either a curved portion, a plurality of curved portions, or two curved portions and a straight portion. However, the description of the elected species fails to provide any such structure. Instead in Fig. 4, the shaft shank 10 the connection between the groove portion 14a and the large diameter portion 11 requires a tapered portion 12 in addition to the two curved portions 33a, 33b, and straight portion 35.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-6 & 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 is vague and indefinite because an open-ended transitional phrase, “comprising”, is used to introduce the *Markush* group at lines 5 & 6, any one of a curved portion, a plurality of curved portions, etc. The proper transitional phrase for introducing a *Markush* group is close-ended so as to avert any ambiguity. See MPEP 2173.05(h).

b. Claim 2, lines 2 & 3 recites the limitation, “a large diameter portion . . . is formed at [i.e. distinct from] an end portion of the external diameter portion”. It is not clear how this limitation is supposed to be interpreted since the external diameter portion is described at page 5, line 17, as one in the same with the large diameter portion.

*Claim Rejections - 35 USC § 102*

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-6 & 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art.

a. Claim 1. Figs. 10 & 11 show a shaft having a shank 100 with a splined portion 104 that is spline engaged with a fitting member 200, and with an external diameter portion

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101 that is formed with a distance of separation from the splined portion 104, both the splined portion and the external diameter portion being formed in an outer peripheral surface of the shank, comprising a curved portion 102b that “extends continuously” so as to connect a cut back portion 104b formed at an end portion of a groove portion 104a of the splined portion 104 and the external diameter portion 101.

b. Claim 2. Figs. 10b & 11 show a large diameter portion 101 which has a diameter that is larger than a diameter of an external periphery of the splined portion 104 and which is formed at an end portion of the external diameter portion at the splined portion side; and a tapered portion 102a which stops the fitting member 200 and which is provided at a side surface of the large diameter portion at the splined portion side.

c. Claim 3. Fig. 10 shows an end portion at the external diameter portion side of the curved portion 102b is formed so as to be further from the shaft axis of the shank than the cut back portion 104b.

d. Claims 4-6. Fig. 10b shows the curved portion 102b can be said to comprise two portions (its left and right halves).

e. Claims 20-24. Fig. 10 shows the splined portion 104 has a shape.

13. Claims 1, 4 & 22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP-09-042303. Figs. 1-5 show a shaft having a shank 5 with a splined portion 5a that is spline engaged with a fitting member, and with an external diameter portion 5b that is formed with a distance of separation from the splined portion, both the splined portion and the external diameter portion being formed in an outer peripheral surface of the shank, comprising a curved portion R2 that

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extends continuously so as to connect a cut back portion 5c formed at an end portion of a groove portion of the splined portion and the external diameter portion.

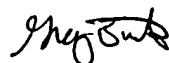
*Conclusion*

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Beckman, Aucktor, Chave, Gehrke, Voss, and Breese each show a shaft having a shank.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703) 308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Greg Binda  
Primary Examiner  
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